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SILVICAL LEAFLET 34.

COULTER PINE.

Pinus coulteri Lamb.

Coulter pine is a small, branchy tree of no commercial value. It forms parts of protection forests on middle slopes and the lower peaks in California, but in the future will probably be discriminated against in favor of species forming closer stands and better soil cover. It is known chiefly on account of the large, heavy cones which it produces, the largest of all the pines.

RANGE AND OCCURRENCE.

Coulter pine is confined to southern California and northern Lower California. From Monte Diablo to Monterey Bay it grows on the inner coast range only; south of that it is found on the western coast ranges also, as far south as Mount San Pedro Martir in Lower California. In the northern part of its range it is found at elevations of from 550 to 4,500 feet, while its altitudinal range in Lower California is from 8,000 to 11,000 feet, on the highest peaks. In general, it is found at from 3,000 to 6,000 feet above sea level throughout the greater part of its range. It grows in dry, warm situations, among the chaparral as well as on the more moist and sheltered north slopes. At 3,000 feet it first appears singly or in small groups on the summits of spurs, in sheltered ravines, or in recesses in the hills.

CLIMATE.

The temperature ranges throughout its extent from 25° to 95° F. on the mountain slopes near the coast, and from 15° to 100° F. on mountains farther inland. The humidity of the air is high near the coast, where cloudy and foggy days are frequent, and low toward the eastern limit of the trees. Precipitation, mostly in the form of rain, averages between 20 and 30 inches, although it may be much less in dry years. Where the species extends inland, in the mountains of southern California, it sometimes experiences conditions approaching aridity, with prolonged periods of drought and rapid evaporation during the summer.

ASSOCIATED SPECIES.

At elevations of less than 3,500 feet, Coulter pine appears singly or in groups, often growing over chaparral. Between 3,500 and 5,000 feet it grows in mixture with incense cedar, yellow pine, bigcone spruce, and oaks. At 5,500 feet sugar pine and white fir appear, and between 6,000 and 7,000 feet Coulter pine and bigcone spruce thin out and disappear.

HABIT.

Coulter pine rarely attains a height of 100 feet and is commonly much smaller—from 50 to 60 feet tall and from 12 to 15 inches in diameter. The bole is straight, but usually clear for less than 10 feet. The crown is sometimes dome-shaped, but rather less so than that of Jeffrey pine, with which it associates. The needles are long—from 8 to 14 inches—stiff, and gray-green in color. The cones are sessile and usually more than a foot long.

SOIL AND MOISTURE.

Coulter pine is not exacting as to soil. It grows well on very steep slopes with shallow, dry soil, but does best on warm, gravelly loam. Humus is not necessary for its development.

TOLERANCE.

It demands light, although early in life it is capable of standing the shade of chaparral.

REPRODUCTION.

It begins to bear cones at an early age (often when it is only 10 or 15 feet high), and the seed years apparently run in three-year cycles. The cones ripen in August, and as the scales open the winged seeds fall to the ground. The opening of the cones is often very slow and occasionally even in January some cones are still closed. The seeds are heavy and ordinarily fall close to the seed trees. The reproduction in the south is never dense and, on the whole, is only fair. In the northern part of its range, where the precipitation is greater, Coulter pine is aggressive in reseeding bare, rocky slopes which have been burned over.